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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/292,132 04/14/99 AKRAM

S MI22-1171

021567 MMC2/0405  
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EXAMINER

MULBURY, S  
ART UNIT

PAPER NUMBER

2812

DATE MAILED:

04/05/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/292,132

Applicant(s)

Akram et al

Examiner

S. Mulpuri

Group Art Unit

2812

☒ Responsive to communication(s) filed on Jan 29, 1901

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 51-53 and 55-77 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 51-53 and 55-77 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 14, 16

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Claims 51,53,55-56,58-62,64-68, 73-77 are rejected under 35 U.S.C. 102(e) as being anticipated by Gardner et al.

Gardner et al disclose a method of making a FET device by the following process steps: Providing a gate oxide layer on as surface of a substrate; forming a gate electrode on gate oxide layer, wherein side walls of the gate oxide and gate electrode are aligned; forming side walls spacers on the aligned side walls of the gate oxide and gate electrode, wherein side walls having fluorine either by doping or ion implantation; heat-treating the substrate with spacer in nitrogen ambient to suppress hot carrier effect (see col. 3-col. 5). It is inherent in the invention of Gardner et al fluorine diffuse in the edges of gate oxide but not in center of the gate oxide region due to annealing.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52, 57,63,69,70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al

Gardner et al disclose a method of making a FET device by the following process steps: Providing a gate oxide layer on as surface of a substrate; forming a gate electrode on gate oxide layer, wherein side walls of the gate oxide and gate electrode are aligned; forming side walls spacers on the aligned side walls of the gate oxide and gate electrode, wherein side walls having fluorine either by doping or ion implantation; heat-treating the substrate with spacer in nitrogen ambient to suppress hot carrier effect (see col. 3-col. 5). Gardner et al do not disclose the (1) gate width, (2) concentration of the fluorine in the range of  $1 \times 10^{19}$  to  $1 \times 10^{21} / \text{cm}^3$  and penetration of fluorine (3) concentration depth not more than 500 angstroms. Gardner et al discloses the process similar to instant process to suppress HCE, but the choice of obtaining such numerical limitation would have been well within the scope of one of the ordinary skill in the art through routine optimization as fine tuning process depending on the degree of suppression of hot carriers.

Applicant's arguments with respect to claims 51-53,55-77 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit:

. Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mulpuri whose telephone number is (703) 305-5184. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
SAVITRI MULPURI  
PRIMARY EXAMINER